



CORPORATE POLICY MANUAL

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Review by Date:	Last Modified: N/A

1. Purpose

The purpose of this policy is to provide guidelines, procedures and criteria for the initiation, investigation and implementation of traffic calming measures within residential neighbourhoods to address safety concerns related to speeding and excessive volume in a fair and efficient manner. Guidelines included in this policy and the Traffic Calming Guide will be applied to local and collector roadways. The policy does not apply to arterial roadways. While similar traffic related issues may exist on arterial roadways, their primary function is to move traffic efficiently.

2. Policy Statement

Traffic calming measures can be effective in reducing vehicle speed, excessive traffic volume and improve overall neighbourhood safety. Traffic calming measures combined with engineering, educational and enforcement tools, can significantly improve the safety of neighbourhoods. The physical traffic calming measures referred to in the below-noted definition refer to a combination of vertical and horizontal deflections in the roadway as well as obstructions and traffic regulations. Traffic calming measures may include speed humps, raised intersections, traffic circles, curb extensions, curb radius reductions, diverters and raised median islands.

3. Definitions

For the purposes of this Policy:

- i. **“85th Percentile”** means the speed at or below which 85 percent of the motorists drive on a given road unaffected by slower traffic or poor weather
- ii. **“Council”** means the Council of the Town of Midland
- iii. **“Flankage”** means the space, extended to the rear lot line, between the longer lot line abutting a public highway and the nearest wall of the main building of a corner lot
- iv. **“Town”** mean the Corporation of the Town of Midland
- v. **“Traffic Calming”** means the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve

conditions for non-motorized street users

4. Objectives of the Policy

The objective and purpose of traffic calming is to restore streets to their intended function by addressing undesirable traffic conditions such as speeding and excessive volume on local and collector roadways. The objectives of traffic calming and this policy are to:

i. Increase the Safety of Neighbourhoods

Excessive traffic volume and speeding on residential roads is the basis for many of the concerns received from residents. Through the use of physical measures, either alone or in various combinations, and when implemented properly, can alter driver behaviour and can improve safety on neighbourhood streets by reducing conflicts between street users. The resulting reduction in volume and speed will create a safer environment for all residents including pedestrians, cyclists, children, disabled persons and seniors.

ii. Improve the Livability of Neighbourhoods

Traffic calming measures may restore the livability of a neighbourhood by minimizing the volume and speed of through traffic. As a result, negative impacts such as excessive noise, air pollution from vehicle emissions, volume of vehicles, and potential safety hazards are minimized. Traffic calming measures can aesthetically enhance the neighbourhood environment with design and landscaping.

iii. Restore Streets to their Intended Function

The principal function of a residential local roadway is to provide access to adjacent properties and is not intended to be through routes or move significant amounts of traffic. The principal function of a residential collector roadway is to provide access to adjacent properties and to provide connections between local roadways and other collector and arterial roadways.

iv. Preserve Access and Minimize Impact to Emergency Services, Public Transit and Other Maintenance Services

The potential impacts to emergency services, transit and maintenance vehicles will be considered throughout the implementation of traffic calming measures. The needs of these services will be balanced against the need to slow and/or reduce traffic. In addition, this policy outlines the process through which all potentially impacted services will have the opportunity to comment on any proposed plans before implementation.

v. Promote Public Participation and Community Support

Traffic calming measures have a direct impact on neighbourhoods and the residents living in them. For traffic calming to be successful, the neighbourhoods must be committed to and support the solution. An important part of the process includes resident communication and feedback in order for staff to understand the history of the traffic problems in the neighbourhood. Effective communication with residents provides staff with the opportunity to explain to residents the benefits of traffic

calming measures while deterring them from less effective countermeasures.

5. Traffic Calming Advantage and Disadvantages

Advantages

Traffic calming may:

- Reduce motor vehicle speeds;
- Reduce traffic volume;
- Discourage through traffic;
- Reduce collisions;
- Improve neighbourhood environment; and
- Reduce conflicts between roadway users.

Disadvantages

Traffic calming may:

- Increase emergency vehicle response time;
- Reduce ease of access in and out of neighbourhoods;
- Result in expensive solutions (time and resources);
- Shift or divert traffic onto neighbouring roadways;
- Increase maintenance time and costs (e.g. snow clearing garbage pick-up); and
- Result in the implementation of measures some consider visually unattractive and/or cause increased noise pollution.

6. Appropriate Streets for Traffic Calming

Traffic calming will only be considered on residential local and collector roadways and not on arterial roadways in the Town.

Local Roadways

The primary function of local roadways is to provide access to adjacent properties. Local roadways are not intended for use as through routes or as important links to move traffic within an area's overall road network.

Collector Roadways

A collector road is a low to moderate capacity road which serves to move traffic from local streets to arterial roads.

A copy of the Town's Road Classification Map from the Town of Midland's Transportation Master Plan is included as Appendix D.

7. Process

The following process will be used when proceeding with a request for traffic calming. An established and formal process for investigating roads provides consistency and equality in the determination of traffic calming.

Residents with traffic related concerns are instructed to submit their written request to investigate traffic calming within their neighbourhood to the Town. Town staff will then conduct a brief preliminary assessment to determine if the requested roadway meets the following Initial Screening Criteria.

7.1 Initial Screening Criteria: Determination of Eligibility

Before making a request, the resident must complete the following initial screen to verify the eligibility of the request. If the resident determines that the request meets the requirements, they can then submit their written request to be further investigated. When requests are received, a review of the roadway(s) is made to determine if the following initial screening criteria are met:

- Must be a residential local or collector roadway;
- The posted speed limit shall not be greater than 50 km/hr;
- Requested street or section of street must be a minimum of 150m in length.

Following this initial review by the resident, Town Staff will verify the initial screen results and confirm with the person making the request as to whether or not their location meets the initial screening criteria. Requests that meet the above-noted initial screening criteria will receive information about the traffic calming process, as well as a copy of the Town's Traffic Calming Request and Petition Forms, attached as Appendix B.

7.2 Traffic Calming Neighbourhood Petition

After it has been determined that the requested location meets the initial screening criteria, the proponent must submit a written request, accompanied by a petition.

The petition must contain an indication of support from at least 51% of the households with direct frontage or flankage onto the section of roadway that has been identified as the location for the potential implementation of traffic calming measures, as defined by Engineering staff. Each household is represented by one signature, regardless of the number of people in the household. Comments from petitioners outside of the area under consideration will be encouraged to participate and comment at the Public Information Session noted in Section 7.8 of the policy. This step in the process is crucial in determining the level of concern from the residents. Failure to meet the 51% support level will result in termination of the investigation; meeting the required 51% support level will trigger the commencement of a traffic calming investigation.

7.3 Data Collection and Analysis

If the requested location meets the initial screening criteria and petition results indicate that there is at least 51% support, data collection and analysis will commence when staff are reasonably able to accommodate the request.

7.4 Data Collection

Staff will conduct the necessary traffic studies to quantify and qualify the traffic concerns

within a neighbourhood. The data collected will pertain to speed (85th percentile) volume traffic generators, collision history sidewalks and pedestrian generators. Once collected and summarized, the data will be utilized in the point assessment system (See Section 7.5).

If the implementation of traffic calming could result in undesirable traffic displacement onto parallel roadways, 'before' traffic volume data will be collected as deemed necessary by Engineering staff. This data will then be utilized to determine if corrective action is required on parallel streets after comparing the 'before' and 'after' traffic volume.

7.5 Point Assessment System

The point assessment system is a screening process focused on the various attributes of a roadway in order to quantify its need for traffic calming. See Appendix C.

The minimum number of points required to proceed with the investigation of traffic calming measures differs based on the classification of roadway.

Based on this, the following are minimum point values for each road style:

Local roadway	—————>	minimum 35 points
Collector Roadway	—————>	minimum 52 points

Should a location fail to meet these requirements, residents who signed the petition will be notified in writing and the investigation for traffic calming measures will discontinue. Locations failing to meet the requirements for the implementation of traffic calming are not eligible for re-evaluation for a period of three years following notification unless there is a substantial change in circumstances as determined by Town Staff.

7.6 Traffic Calming Design Considerations

The data collected combined with site visits, historical information, future maintenance, and construction plans, as well as resident feedback will be taken into consideration to determine potential traffic calming measures.

Appropriate traffic calming measures will be determined based on the list of traffic calming measures outlined in Appendices A and E, along with industry best practices. The proposed traffic calming measures would be in accordance with the design guidelines outlined in the Canadian Guide to Neighbourhood Traffic Calming and the engineering judgement and experience of staff.

The preferred design will first be presented to emergency, transit and maintenance services. It will then be presented for public input. After any required modifications to the preferred design as a result of this input, the traffic calming measure would be implemented.

7.7 Public Information Meeting Notice

Notification will be published on the Town's website and through social media channels. It

will present an opportunity to solicit comments from all town residents and businesses on the traffic calming measures.

7.8 Public Information Meeting

Staff will host a public information meeting to present the purpose, objectives and the implementation process of traffic calming in general. Staff will then present and explain the rationale behind the specific preferred traffic calming design. The public meeting will provide residents and business owners with an opportunity to become involved in the process, learn more about the proposed traffic calming treatment(s), and to provide their feedback.

7.9 Recommend Final Plan to Council

If the traffic calming design is such that additional budget or changes to a by-law are required to implement, then a report and recommendation will be submitted to Council for consideration and approval.

7.10 Resident Notification

Staff will mail notices to residents in the affected area and any other persons having requested notification, to inform them that traffic calming has been either approved or not approved by Town Council on the subject roadway. If the traffic calming plan is approved, the notice will include information about the traffic calming review process for the subject roadway and will include the following details:

- Copy of Preferred Traffic Calming Plan clearing showing locations of treatments;
- Information about where residents may review the detailed design drawings; and
- Implementation timeframe

7.11 Implementation of Traffic Calming Measures

Upon approval of Council and resident notification, traffic calming measures will be implemented. Residents will be notified of implementation timelines through the notice as detailed in Section 7.10. Where feasible, staff may decide it is beneficial to phase in the traffic calming plan through the use of temporary or removable traffic calming measures such as pavement markings or barrels. This will allow time to examine the impact of the measures and their effectiveness before committing funding to permanent treatments.

7.12 Evaluation and Monitoring

Engineering staff will monitor the roadway to determine the effectiveness of the utilized measures and their impact on the surrounding road network. This information will be used in recommending similar measures in the future. In addition to conducting before and after speed studies, 4-6 months after implementation, the Town will conduct studies to assess if the traffic calming plan has resulted in significant amounts of traffic diverting to adjacent, parallel streets. These after studies will be compared with the Town's 'before' studies to determine the change in traffic volume. While every attempt will be made to avoid

transference of traffic onto other streets, if it is found that traffic has increased by greater than 15% (with a minimum of 150 vehicles), on a parallel street due to traffic calming implementation, the Town will explore corrective action opportunities to remedy the situation and/or reduce the impact.

7.13 Removal of Traffic Calming Measures

Traffic calming devices may be removed at the request of residents, provided that at least the same level of support exists to remove as was measured for installation. Traffic calming measures must be installed for at least 2 years before starting the process to remove them. If traffic calming devices are removed, the subject street must wait at least three years before requesting a new traffic calming plan; at this point the approval process will start over.

Staff may immediately remove any traffic calming measures if it is determined that the traffic calming measure has introduced an unintended safety consequence.

8. Administration

- a) This Policy will be administered by the Environment and Infrastructure Department.
- b) Staff may waive all requirements of this Policy if they are of the opinion that there is an immediate or inherent safety concern and will immediately bring any changes directly to Council if a by-law amendment is required.

9. Severability

- a) If any provision of this Policy is declared invalid for any reason by a court of competent jurisdiction, the remainder of this Policy shall still continue in force.
- b) Where there is any conflict between this Policy/By-law and any provision of any previously passed Policy/By-law, the said previous provision is hereby revoked.

10. Appendices

Appendices attached to this Policy form part of this Policy and have the same force and effect as if the information in them were contained in the body of the Policy.

Appendix A

Traffic Calming Techniques

Appendix B

Traffic Calming Request Form and Petition

Appendix C

Traffic Calming Point Assessment

Appendix D
Road Classification Map

Appendix E
Traffic Calming Guide

APPENDIX "A"

Traffic Calming Techniques

APPENDIX “A” – TRAFFIC CALMING TECHNIQUES

Speed Cushion

Speed cushions are narrower speed humps that are typically installed in the Vertical traffic calming measures provide an obstruction that vehicles are able to travel over. The change in pavement height (and sometimes pavement materials) can cause discomfort to the occupants of vehicles that are exceeding the design speed of the traffic calming measure. It should be noted that most vertical traffic calming measures are not preferred along roadways that are emergency vehicle routes or transit routes. To reduce the chances of potential liability issues, vertical traffic calming measures should be signed and marked in accordance with reference material provided by the Institute of Transportation Engineers (ITE) and the Neighbourhood Traffic Calming (TAC).

Vertical traffic calming measures typically perform better when they are installed in a series, as opposed to a single isolated measure. The deceleration and acceleration of a vehicle, while negotiating a series of vertical traffic calming measures, is dependent on the number and spacing of the installations.

The implementation of vertical traffic calming measures can result in some traffic diverting onto parallel streets. This essentially moves the cut-through problem instead of solving it. Consideration should be placed on the concept of improving the Neighbourhood (not just improving the street).

Vertical traffic calming measures include speed humps, speed cushions, speed tables, raised crosswalks, raised intersections, and textured pavements.

Speed cushions typically are six (6) feet in width. Speed cushions typically range in length between seven (7) and ten (10) feet. Passenger vehicles will traverse the speed cushions in the same manner as a speed hump. However, emergency vehicles are able to straddle the speed cushions due to their wider wheel track. Thus, response times for emergency vehicles are not increased as much (if at all).

Advantages:

- Less expensive than speed humps
- Effective in reducing vehicle speed
- Does not impact emergency vehicle response time as much as speed humps

Disadvantages:

- Increases noise and air pollution in Neighbourhood
- Passenger vehicles with larger axle widths may be able to straddle the speed cushions
- May be damaged by snow plows



Raised Intersection

Raised intersections can be used as a traffic calming measure while also alerting drivers to the potential for pedestrians or vehicles at an intersection. The physical attributes are similar to a speed table in that each intersection approach elevates to a height of three (3) inches over a length of six (6) feet. The flat top, also similar to a speed table, is provided throughout the entire intersection.

Advantages:

- Provides a more visible pedestrian crossing
- Provides traffic calming along two roads
- Quicker response time for emergency vehicles than speed humps
- Effective in reducing vehicle speed, but not as well as speed humps Addition of brick or textured materials can improve aesthetics

Disadvantages:

- Very expensive compared to speed humps and speed tables
- More expensive than speed humps
- Increases response time for emergency vehicles Increases noise and air pollution in Neighbourhood
- Could create drainage impacts
- May be damaged by snow plows

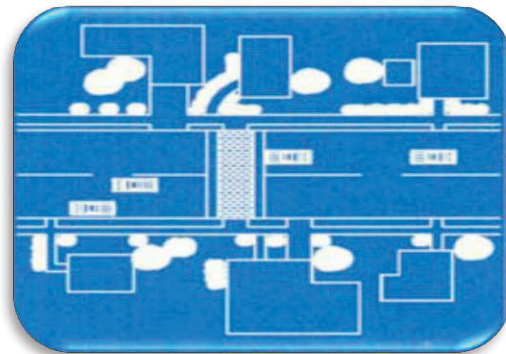
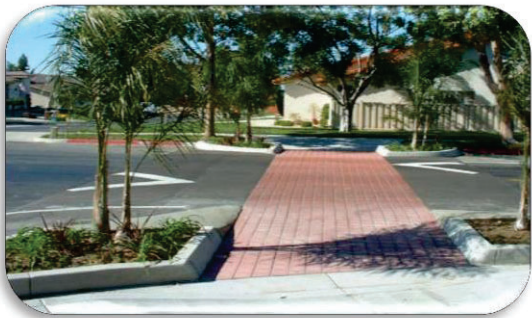


Raised Crosswalk

Raised crosswalks have a similar shape to a speed table, but the flat top contains a striped pedestrian crosswalk. These measures should be elevated to a height that matches the adjacent sidewalk, such that the raised crosswalk is flush with the curb or top of sidewalk elevation at each end. Raised crosswalks must be installed with the appropriate sidewalk transitions on both sides.

Advantages:

- Provides a more visible pedestrian crossing
- Quicker response time for emergency vehicles than speed humps
- Effective in reducing vehicle speed, but not as well as speed humps
- Addition of brick or textured materials can improve aesthetics



Disadvantages:

- More expensive than speed humps
- Increases response time for emergency vehicles
- Increases noise and air pollution in neighbourhood
- May be damaged by snow plows

NOTE: Lack of sidewalk infrastructure may result in a raised crosswalk not being applicable in the Town. Raised crosswalks can be constructed without the presence of sidewalks, as long as there are AODA compliant pedestrian landing areas with detectable warning strips on both ends of the raised crosswalk.

Speed Table

Speed tables are flat-topped speed humps. Speed tables typically measure between three (3) and four (4) inches in height and 22 feet in length, with the flat portion being ten (10) feet in length. Speed tables are typically long enough for the entire wheelbase of a passenger car to rest on the flat top. Their long flat fields give speed tables higher design speeds than speed humps. The brick or other textured materials are usually used on the flat top to improve the appearance of speed tables, draw attention to them, reduce speed, and may enhance safety. Like speed humps, discomfort increases as the speed of the vehicle traveling over the hump increases. Speed tables are good for locations where low speeds are desired but a somewhat smooth ride is needed for larger vehicles.

Advantages:

- Quicker response time for emergency vehicles than speed humps
- Effective in reducing vehicle speed, but not as well as speed humps
- Addition of brick or textured materials can improve aesthetics

Disadvantages:

- More expensive than speed humps
- Increases response time for emergency vehicles
- Increases noise and air pollution in neighbourhood



Speed Hump

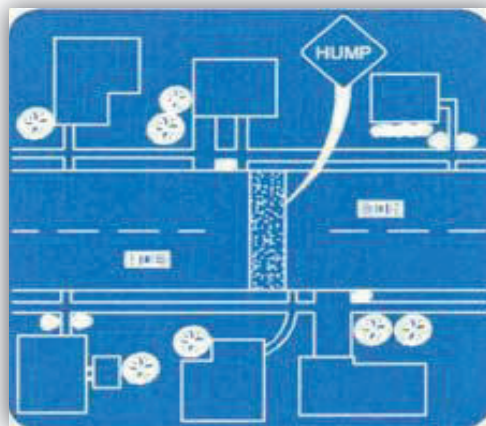
Speed humps are raised areas of pavement which are rounded on top and placed cross the entire street. Speed humps typically measure between 75 and 100 millimeters in height and 10m in length. The height and length of the speed hump determines how fast it can be navigated without causing discomfort to the driver. Discomfort increases as the speed of the vehicle traveling over the hump increases.

Advantages:

- Low Cost
- Effective in reducing vehicle speed

Disadvantages:

- Increases response time for emergency vehicles
- Increases noise and air pollution in Neighbourhood
- May be damaged by snow plows



HORIZONTAL TRAFFIC CALMING MEASURES

Horizontal traffic calming measures incorporate raised islands and curb extensions to prevent vehicles from traveling in a straight line at excessive speeds. Vehicles either slow down while maneuvering around the horizontal obstacle, or slow down due to the physical perception of a narrower roadway. To reduce the chances of potential liability issues, horizontal traffic calming measures should be signed and marked in accordance with reference material provided by the Institute of Transportation Engineers (ITE) and the Neighbourhood Traffic Calming (TAC).

The implementation of horizontal traffic calming measures can result in some traffic diverting onto parallel streets. This essentially moves the problem instead of solving the problem. Consideration should be placed on the concept of improving the Neighbourhood (not just improving the street).

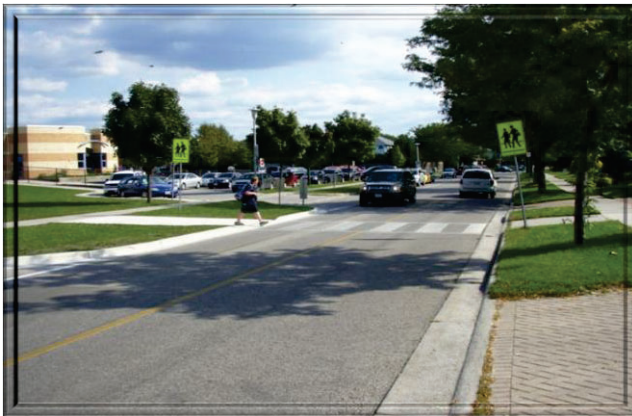
Horizontal traffic calming measures include Neighbourhood traffic circles, roundabouts, chicanes, lateral shifts, center medians and curb extensions.

Curb Extension

Curb extensions reduce the roadway width at intersections and midblock locations, thereby reducing speeds when drivers experience the physical perception of a narrow roadway. Curb extensions offer the more important benefit of improving pedestrian safety by providing a refuge and shortening the crossing distance.

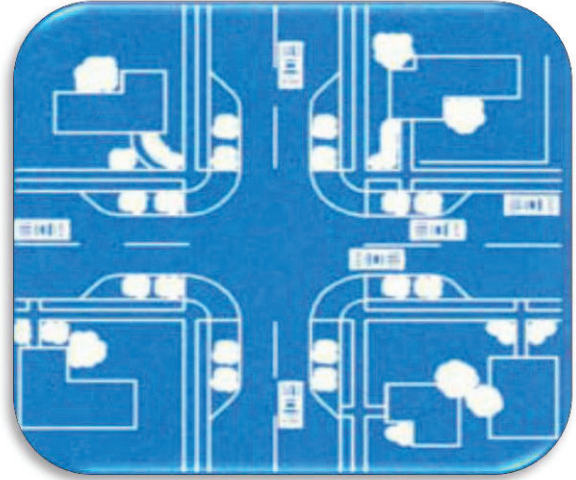
Advantages:

- Encourages a safer pedestrian environment by providing a shorter crossing distance and increased visibility
- Very effective in front of elementary schools in addressing pick-up, drop off parking issues
- Prevents parking too close to intersections keeping sight lines open
- Opportunity for landscaping and improved aesthetics



Disadvantages:

- Effectiveness is limited by the absence of vertical deflection and if traffic volumes are low
- Difficult for right-turning emergency vehicles
- Increased cost for maintenance of landscaping if it exists
- May require bicyclists to briefly merge with vehicular traffic



Curb Radius Reduction

The Curb radius reduction is the reconstruction of an intersection corner to a smaller radius. This measure effectively slows down right-turning vehicle speeds by making the corner 'tighter' with a smaller radius. A corner radius reduction may also improve pedestrian safety to a certain degree by shortening the crossing distance. This type of measure is acceptable primarily on local roads and to a lesser extent on collector roadways, its use is often limited to specific situations where the existing intersection geometry would allow the reconstruction. In addition, curb radius reductions should not be used on transit routes requiring a right turn.

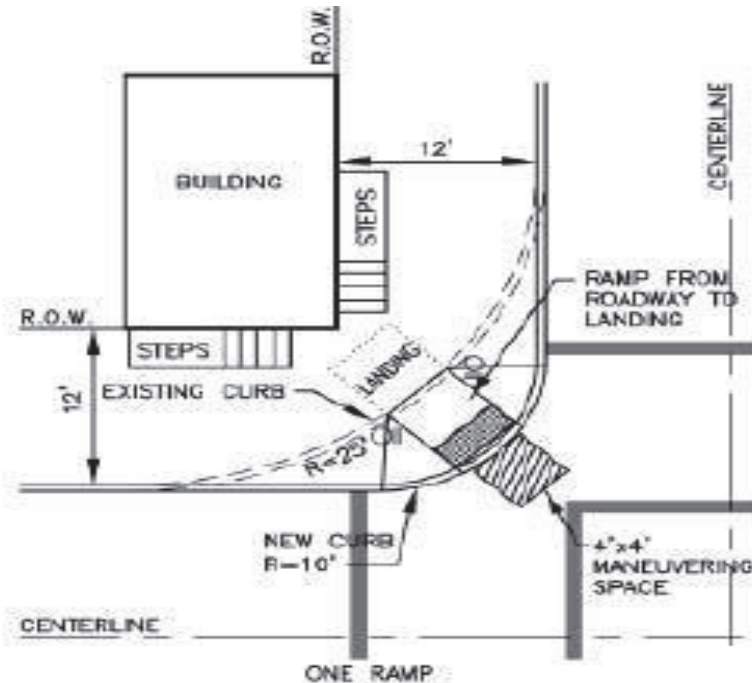
Advantages:

- Shortens pedestrian crossing time
- Forces vehicles on approach to come to a full stop



Disadvantages

- Large axle vehicles are unable to negotiate the turn without driving over the sidewalk



Traffic Circle

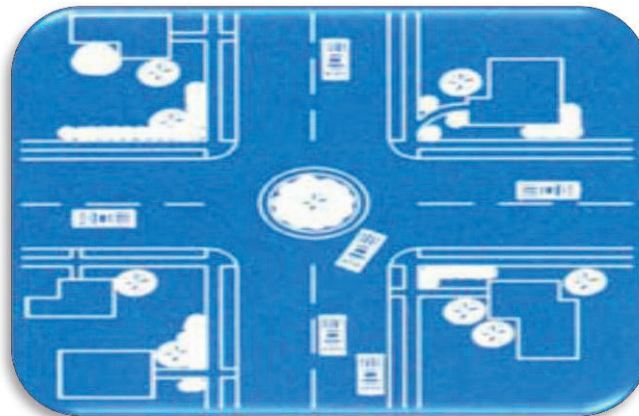
Traffic circles are raised islands placed in intersections, forcing traffic to circulate around the raised island. The traffic circle is typically circular in shape and can include landscaping within the raised island. The raised island in the center of the intersection typically measures between 16 and 24 feet in diameter. Traffic circles can be controlled by YIELD signs on all approaches, STOP signs on all approaches, or a combination of free-flow conditions along the major street and STOP signs along the minor street. Traffic circles prevent drivers from speeding through intersections by impeding the through movement. Traffic circles are most effective when there is vertical planting material in the center. This adds to its visibility to the driver and provides aesthetics to the Neighbourhood.

Advantages:

- Effective in reducing vehicle speed
- Can reduce severity of motor vehicle collisions
- Opportunity for landscaping and improved aesthetics

Disadvantages:

- Difficult for left-turning emergency vehicles
- Possible need for right-of-way, depending on size of raised island
- Increased cost/labor for maintenance of landscaping



Raised Island Median

Raised island medians are raised islands located along the centerline of a street that narrow the travel lanes at that location. The presence of a median, resulting in a smaller roadway width, reduces speeds when drivers experience the physical perception of a narrow roadway. The medians can be landscaped to provide visual amenity.

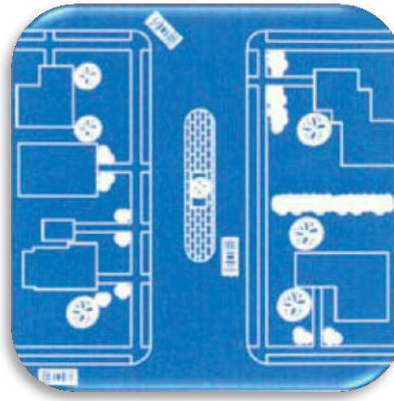
The median island can act as a “gateway” when placed at the entrance to a neighbourhood. A median island of adequate width can also be referred to as a “pedestrian refuge” if located at a crosswalk and the median is accommodating for pedestrians.

Advantages:

- If designed well, can have a positive aesthetic value
- Opportunity for landscaping and improved aesthetics

Disadvantages:

- Effectiveness is limited by the absence of vertical deflection
- May interrupt driveway access to adjacent properties
- Increased cost for maintenance of landscaping



One Lane Chicanes

One Lane Chicanes are two or more curb extensions that are designed to narrow a two lane roadway to a one lane roadway for a short distance. The purpose for a one lane chicane is that it forces drivers to stop to allow one direction of traffic to pass through the chicane at one time, as well drivers alternate from one side of the street to the other, creating S-shaped travel patterns. Raised landscaped islands or delineators are usually provided at both ends of a chicane in order to enhance the drivers awareness of the need for a lateral shift.

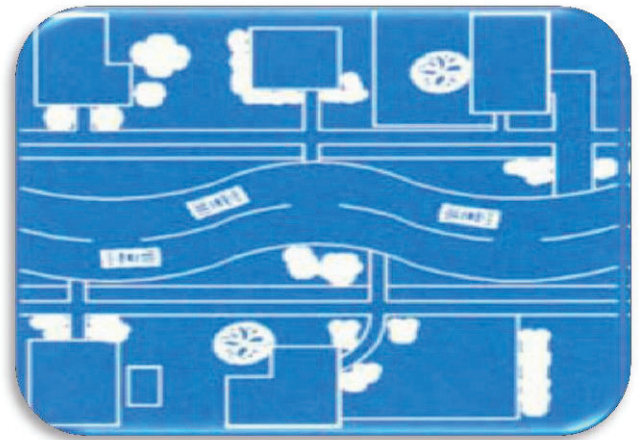
Along a section of roadway that contains a chicane, off-street parallel parking may be restricted along property frontages due to curb and gutter.

Advantages:

- Discourages high speeds by forcing horizontal deflection
- Easily negotiable by emergency vehicles
- Opportunity for landscaping and improved aesthetics

Disadvantages:

- Must be designed carefully to discourage drivers from deviating out of the appropriate lane
- Curb realignment and landscaping can be expensive, especially if there are drainage issues
- Increased cost for maintenance of landscaping



Lateral Shift

Lateral shifts can be described as one half of a chicane. Curb extensions or pavement markings are provided on otherwise straight streets that cause travel lanes to bend one way and then bend back the other way to the original direction of travel. With the appropriate degree of deflection, lateral shifts are one of the few measures that have been used on collectors or even arterials. When high traffic volumes and high posted speed limits prevent the use of other traffic calming measures, lateral shifts can be considered.

Advantages:

- Can accommodate higher traffic volumes than many other traffic calming measures
- Discourages high speeds by forcing horizontal deflection
- Easily negotiable by emergency vehicles
- Opportunity for landscaping and improved aesthetics

Disadvantages:

- Must be designed carefully to discourage drivers from deviating out of the appropriate lane
- Curb realignment and landscaping can be expensive (pavement markings are less expensive)
- Increased cost for maintenance of landscaping



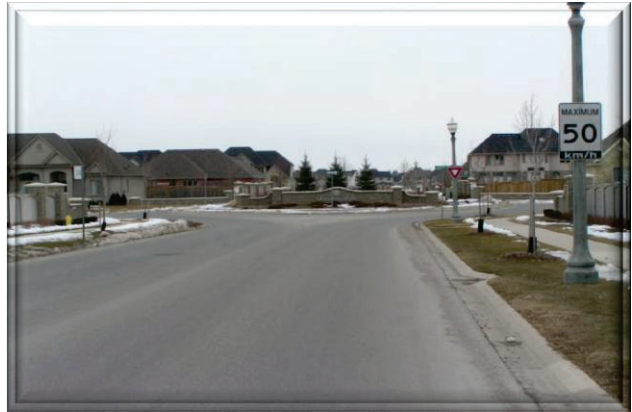
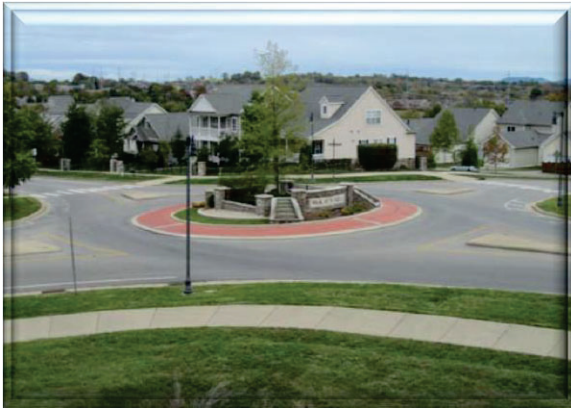
Roundabout

Unlike traffic circles, roundabouts are larger and typically require additional right-of-way. The central island diameter of a single-lane roundabout can measure between 55 and 110 feet. Roundabouts require raised splitter islands to channel approaching traffic to the right.

Roundabouts are found primarily on arterial and collector streets, often substituting for intersections that are controlled by traffic signals or all-way stop signs. More information on roundabouts can be found in "Roundabouts: An Informational Guide" prepared by the Federal Highway Administration (FHWA).

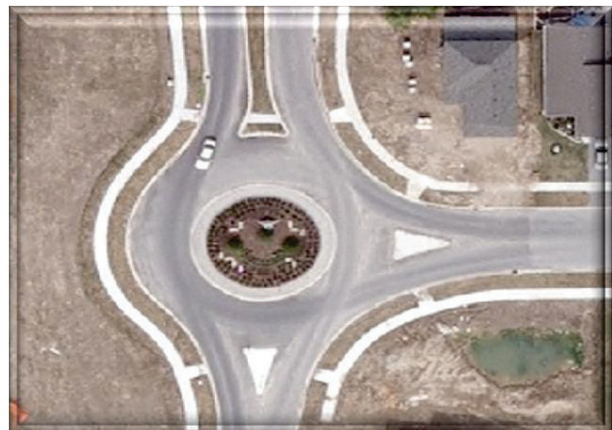
Advantages:

- Moderates traffic speed on an arterial, collector, or local road
- Enhanced safety compared to a traffic signal
- Less expensive to operate than a traffic signal
- Opportunity for landscaping and improved aesthetics



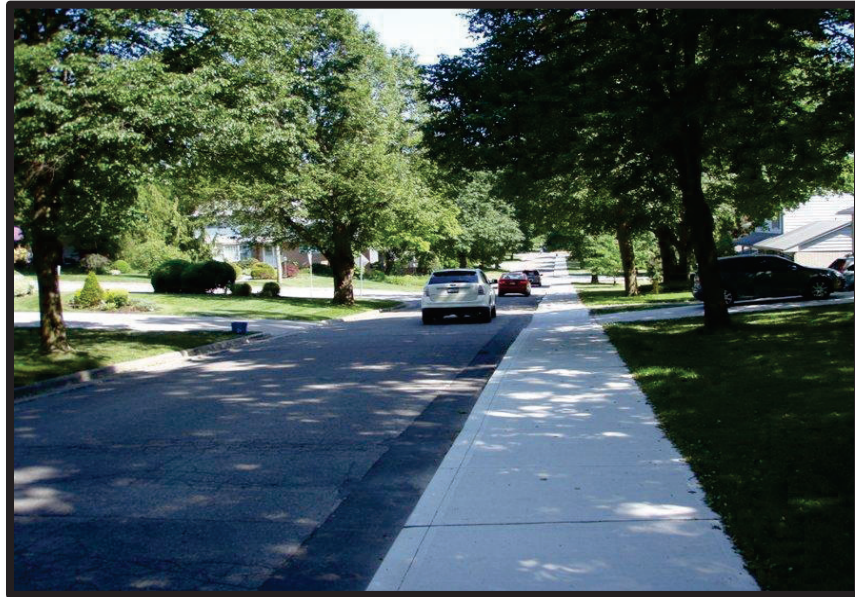
Disadvantages:

- May require major reconstruction of an existing intersection
- Increases pedestrian distance from one crosswalk to the next
- Difficult for visually impaired pedestrian to navigate
- Increased cost for maintenance of landscaping



Curb Face Sidewalk

A curb face sidewalk is a wider than normal sidewalk retrofitted into an older area of the Town where putting a sidewalk in standard location would eliminate or damage a number of mature trees. The sidewalk is primarily built on the existing road bed, narrowing the road.

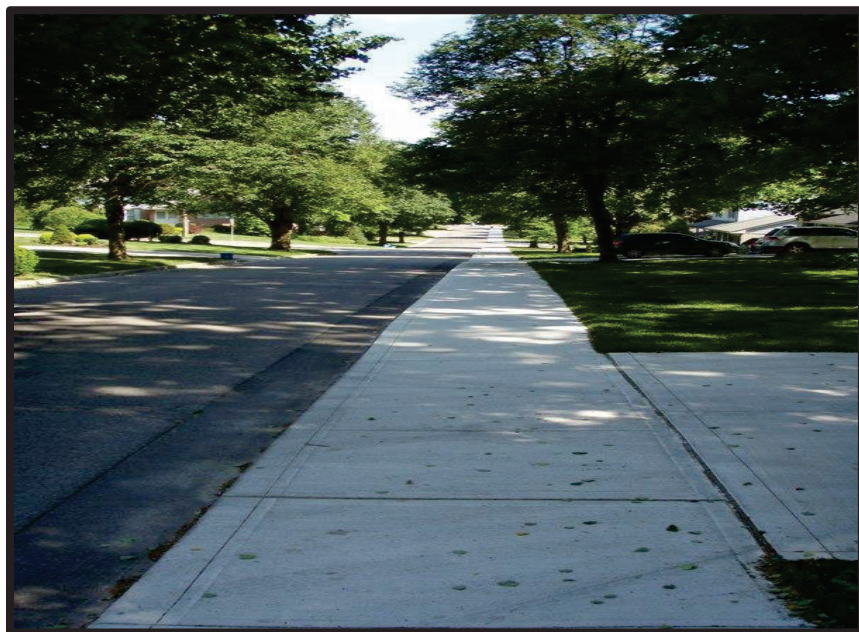


Advantages

- Removes the pedestrians from the road improving pedestrian safety. Narrowing the road will slow some drivers down.
- No trees need to be removed.

Disadvantages

- May have to eliminate on street parking. Expensive.



PHYSICAL OBSTRUCTION

Physical obstructions are the most severe traffic calming tool and are only used when it is determined a vertical or a horizontal measures won't address the identified problem. The primary purpose of physical obstructions is to eliminating short-cutting traffic by stopping specific vehicle movements. It is important to note that physical obstructions are intended to deter motor vehicle traffic only and not to obstruct bicycle or pedestrian traffic. These types of measures are typically implemented at intersections, but may also be applied at some mid-block locations.

Obstructions range from those that have a relatively minor impact on vehicular access to those that severely restrict access such as a road closure. It is important to remember once the vehicle restricted movement is in place area residents have to live with it every day.

Directional Closure

Directional closures are created using a curb extension or other barrier that extends into the roadway, approximately as far as the centerline. This device obstructs one side of the roadway and effectively prohibits vehicles travelling in that direction from entering. Directional closures are especially useful for controlling non-compliance of one-way road sections and are compatible with other modes such as bicycles.

At all directional closures, bicycles are permitted to travel in both directions through the unobstructed side of the road; however, some directional closures have a pathway built through the device specifically for bicycles. Since their purpose is to prevent short-cutting traffic, directional closures are applicable for use on local streets and minor collectors, at their intersection with collectors and arterials

Advantage:

- Directional closures typical result in about a 40% reduction in traffic volumes.
- There may also be a reduction in travel speeds around the intersection
- Eliminates right angle collisions

Disadvantage:

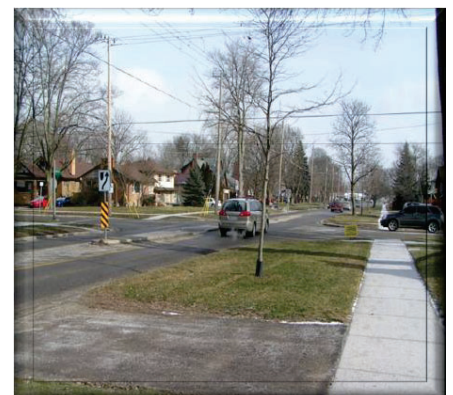
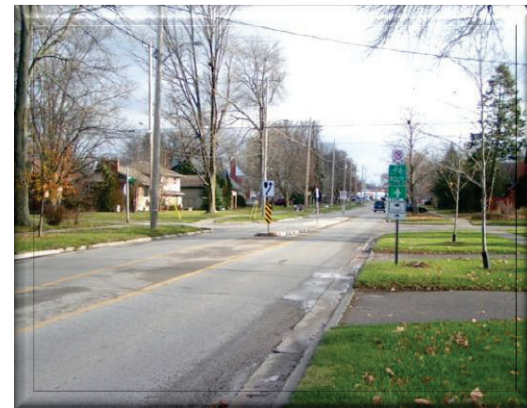
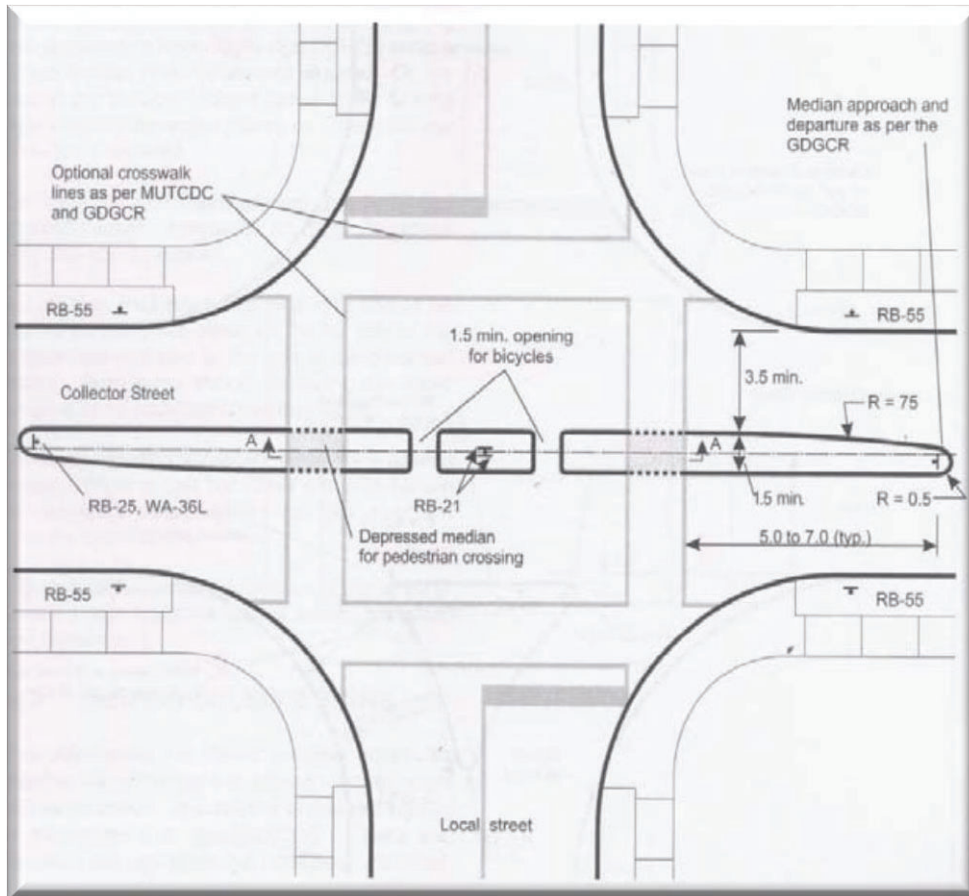
- Restricts resident access to the neighbourhood
- May divert significant volume of traffic to parallel streets without traffic calming measures



Raised Median Through Intersection

Raised Medians through Intersections are an elevated median installed through an intersection, blocking through traffic and left turning movements in certain directions. This type of device is especially effective at preventing short-cutting and through traffic while providing some secondary pedestrian safety benefits.

The advantages and disadvantages are the same as the directional closure.



Rights-In/Rights Out Islands

Right-in/right-out islands are raised triangular islands located on an intersection approach to limit the side street to right turn in and out movements. Similar to a raised median through an intersection, this device is used primarily to restrict movements to and from an intersection roadway.

Right-in/right out islands may be considered only for use in locations where local residential streets intersect another roadway of any class. The island needs to be designed properly or vehicles will drive left around it.

The advantages and disadvantages are the same as the directional closure.



Diverter

A diverter is a raised barrier placed diagonally across an intersection that forces traffic to turn and prevents traffic from proceeding straight through the intersection. Diverters can incorporate gaps for pedestrians, wheelchairs and bicycles and can be mountable by emergency vehicles. The purpose of a diverter is to obstruct short-cutting or through traffic.

Advantage:

- Diverters can result in a 20% to 70% reduction in area-wide traffic volumes, depending on extent of diverters used.

Disadvantages:

- Restricts resident access to the neighbourhood
- May divert significant volume of traffic to parallel streets without traffic calming measures.



Full Closure

A full closure is a barrier extending the entire width of a roadway, which obstructs all motor vehicle traffic along the roadway. A closure can change a four-way intersection to a three-way intersection, or a three-way intersection into a non-intersection. Gaps can be provided for cyclists and they are typically passable by emergency vehicles. The purpose of a full closure is to eliminate short-cutting or through traffic.



Advantages:

- Eliminates all short-cutting or through traffic.

Disadvantages:

- Restricts resident access to the neighbourhood
- May divert significant volume of traffic to parallel streets without traffic calming measure.

PASSIVE & MITIGATING MEASURES

Passive traffic calming measures do not require construction of physical modifications to the roadway. Passive traffic calming often results in lower cost and prevents constructing a more-permanent change to the roadway. Physical (vertical and horizontal) traffic calming measures will be considered by the Town when either the passive measures have not alleviated the Neighbourhood concerns or the Town determines the need for their installation.

Passive traffic calming measures include education, targeted speed limit enforcement, radar trailer placement, dynamic speed display signs, and speed legends.

Education

Activities that change people's perceptions and help alter driver behaviour are most preferred. Meetings and workshops with neighbours and the Town can help implement and direct traffic calming applications. Most traffic problems are a result of human behaviour. Through outreach programs and Neighbourhood watch programs such as the Active and Safe Routes to School program, residents can play a big part in spreading the information.

Advantages:

- Flexible in the duration of meetings, workshops, etc. Inexpensive compared to other alternatives

Disadvantages:

- Difficult to measure the effectiveness
- May take time to be effective
- Potential challenge in generating citizen participation

Community Entrance Signs

The "Drive Slowly... Think of Us" sign is purely informational and as such, is intended to serve as a reminder to motorists that they are entering a residential area where the residents are concerned about the safety and integrity of their neighbourhood.



As the over use of any traffic control device or sign can have a negative effect on motorist activities, the Engineering Department limits the placement of community entrance signs using the following principles/guidelines:

Limits its installation to entrances to residential neighbourhoods off collector and arterial roadways where the neighbourhood experiences a degree of non-residential through traffic.

The sign is meant to serve as a reminder for motorists to "turn off" the highway driving mode and to be aware that they are entering a residential area where reduced speeds are required to negotiate vehicles entering and exiting driveways as well as the potential for children to be playing adjacent to the roadway.

Textured Crosswalks

A textured or patterned surface placed along a pedestrian crosswalk to increase visibility and safety. Increases visibility and safety of a pedestrian crosswalk. Can be combined with curb extensions and elevated crosswalks to further enhance pedestrian safety. Drivers typically slow down when crossing textured pavement due to vibration created by the pavement surface. However, this also creates considerable noise that may be a disadvantage for neighbours.



Advantages:

- Pleasing visual aesthetics

Disadvantages:

- Noise pollution
- Higher cost
- Not as effective in reducing speeds



Targeted Speed Limit Enforcement

The Town, through the Midland Police can provide targeted speed limit enforcement in response to identified operational issues. Targeted speed limit enforcement purpose is to make drivers more aware of their speed within a residential area. This measure typically only provides a temporary benefit, since speed limit enforcement is not available on a regular, on-going basis.

Midland Police work with the Town Engineering Department in addressing speeding issues within residential areas.

Advantages:

- Does not require time for design
- Does not slow emergency vehicles
- Effective in reducing speeds in a short timeframe
- Automated speed studies can determine best enforcement times

Disadvantages:

- Effectiveness may be temporary
- Expensive to maintain a continued program of enforcement
- Fines lower than enforcement cost
- Time and resources constrained



Radar Speed Display Sign

A dynamic speed display sign performs the same function as a radar trailer, but is meant to be installed as a permanent device. Real-time speeds are relayed to drivers and flash when vehicle speeds exceed the posted speed limit. Dynamic speed display signs are typically placed in on a street for a period of 1 week. A higher priority is placed on locations with younger or older pedestrians.

Advantages:

- Inexpensive
- Does not require time for design
- Does not slow emergency vehicles
- Effective in reducing speeds in a short timeframe

Disadvantages:

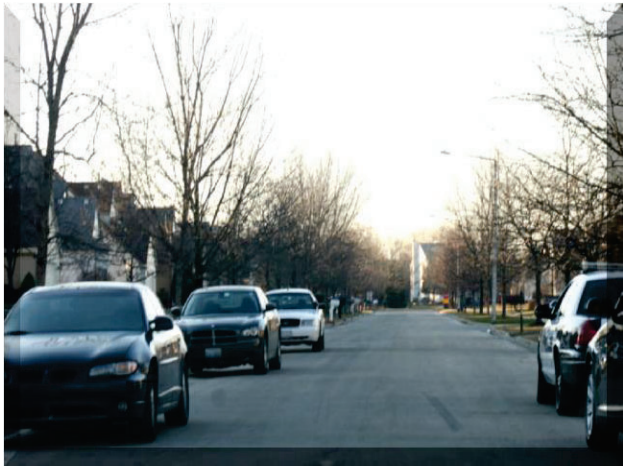
- Requires power source
- Only effective for one direction of travel
- Long-term effectiveness is uncertain
- Subject to vandalism



On Street Parking

All roads within residential areas are built wide enough to allow on street parking on at least one side of the road. Area residents often create the opportunity to speed by introducing No Parking zones. Eliminating parked vehicles from your street significantly increases the width of the road and will increase the speed of local traffic. There have been studies done in North America which have shown the introduction of a No Parking zone increased the speed of traffic by 20%.

The Engineering Department now warns all residents who request No Parking zones they run the risk of increasing the speed on their street. If a speeding problem is identified on your street the Town may consider asking residents to consider reintroducing on street parking as a low cost way to address the problem.



Road Diet

A road diet refers to using pavement markings to make the travel portion of the road narrower, typically introducing bike lanes and or parking lanes. Passive speed control measures such as pavement markings attempt to change the fundamental sensory information available to drivers to influence their speed behaviour. By adding markings to the road, drivers' perceptions can be distorted creating the illusion that they are driving faster than they really are, persuading drivers to slow down. Additionally, the new road markings can serve as a warning sign; because these pavement patterns are mostly unfamiliar to road users, they violate driver expectancy causing motorists to decelerate.



Diagonal Parking

Angled parking spaces designed to change the perception and function of a street. Provides easier maneuvering and more stalls than parallel parking. Cost effective strategy which forces drivers to be more aware of nearby vehicles and pedestrians, while also reducing the crossing distance for pedestrians.



“Traffic Calmed Neighbourhood” Signs

Signs indicating that the driver is entering a traffic calmed neighbourhood. Informs drivers that they are entering a neighbourhood that has forms of traffic measures in place.



Curb Radius Reduction

A redesign of an intersection corner to allow for a smaller radius. Smaller curb radii result in slower turning speeds and greater pedestrian comfort. Reduces right turning speeds at intersections and improved pedestrian comfort. Small curb radii also provide pedestrians with larger waiting areas.



“Community Safety Zone” Sign

Sign indicating a zone where pedestrian safety is a high priority. Traffic related incidents or violations often result in doubling fines in these areas. Encourage safe driving, typically installed near schools, daycare facilities, senior homes, public places, or hospitals.



On-Road Messaging (Pavement Markings)

On-road pavement markings which communicate a higher sense of priority to drivers and improve visibility. Increases the visibility of the message being communicated to drivers (SLOW, School Crossing Ahead, 40 km/h max.) Beneficial in high priority areas such as schools.

Road Watch Program

A community driven initiative that allows residents and visitors the ability to report dangerous driving to the police. Encourages safer driving habits by providing residents with the tools to contribute to the enforcement of safe conditions of the roadway.

Image

Bicycle Boulevard

Installation of signage and pavement markings indicating that the roadways are shared facilities for bicycles and automobiles. Promotes active transportation on streets that experience low automobile volumes.



Speed Kidney

A vertical traffic calming device that allowing motorists to move through a path instead of over a bump. Consists of a raised and curved area. Reduces automobile speeds. Acts as a speed bump, while also providing an alternative path to avoid the vertical deflection.



APPENDIX “B”

Traffic Calming
Request Form and
Petition



Corporation of the Town of Midland

575 Dominion Avenue

Midland, ON

L4R 1R2

Telephone: 705-526-4275

Fax: 705-526-9971

Submit to: engineering@midland.ca

Traffic Calming Request Form (Traffic Calming Policy CP-2021-07)

What is traffic calming? The goal of traffic calming is to make streets safer for people to bike, walk and drive. Making physical changes to the roadway, such as horizontal shifts (curb extensions, chicanes) and vertical shifts (raised crosswalks and intersections). This helps reduce speeding and enhances the quality of life by making the street more comfortable for all users. If you would like to get a copy of our Traffic Calming Brochure for a more detailed description of traffic calming and the various tools and techniques available, please call (705) 526-4275 or email engineering@midland.ca.

Traffic Calming Request Form directions: Please fill out this form and send it to the Town of Midland, Engineering Department. Methods of submitting the form are listed on the last page. By using this form, you will help us assess the type of issues or concerns you are having with a street in your neighborhood. We will gather additional data, such as crash records and speed studies. This information, together with any related roadway work schedules, will help us prioritize your request among others we've received.

Contact information:

Please provide your contact information. The contact person will be kept informed of the status of the request and results of the Traffic Calming Study.

Name: _____

Phone number: _____

Email address: _____

Mailing address: _____

Town or City: _____ Province: _____ Postal Code: _____

Area of concern:

Street locations of concern:



Corporation of the Town of Midland

Check each that apply:

- | | |
|----------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Cut through traffic | <input type="checkbox"/> Traffic volume |
| <input type="checkbox"/> Collision concerns | <input type="checkbox"/> Bike safety |
| <input type="checkbox"/> Pedestrian safety | <input type="checkbox"/> Large trucks |
| <input type="checkbox"/> Speeding | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Aggressive driving | _____ |

Description of the problem:

What time of day are these concerns more noticeable:

Are there any perceived dangers to pedestrians, residents, or property? Please describe:

Please provide additional information that you feel will be helpful. It may be useful to draw a picture (or provide a photo) to clearly identify the issues you would like to see addressed.

Is a photo or drawing attached? Yes No



Corporation of the Town of Midland

Are you aware of others in the area with the same concerns?

Are you requesting the **removal** of Traffic Calming measures?

What area would you like the Traffic Calming Measures removed?

Petition attached:

Petition template is below on pages 4 and 5.

Acknowledgment: (Applicant has read the Traffic Calming Policy as well as the requirements that follow.)

Signature

Date

Your application is now complete.

Please send applications to engineering@midland.ca

Town of Midland - Engineering
575 Dominion Avenue
Midland, ON.
L4R 1R2



Corporation of the Town of Midland

575 Dominion Avenue

Midland, ON

L4R 1R2

Telephone: 705-526-4275

Fax: 705-526-9971

Submit to: engineering@midland.ca

Traffic Calming Petition

We, the undersigned hereby petition the Corporation of the Town staff to perform the necessary evaluation, hold public hearings, and recommend that appropriate traffic calming measures be installed on:

Streets: _____

A neighbourhood ballot will be circulated, and a public hearing will be held before physical measures are approved for this location.

By signing this petition,

- I agree to have appropriate traffic calming measures installed in front of my residence/ business if deemed the most appropriate solution by Town staff; and
- My signature here counts as a “yes” vote unless I later submit a “no vote” in a neighbourhood ballot which will be distributed if my block is deemed eligible for traffic calming.

Name	Address	Signature
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____



Corporation of the Town of Midland

575 Dominion Avenue

Midland, ON

L4R 1R2

Telephone: 705-526-4275

Fax: 705-526-9971

Submit to: engineering@midland.ca

Traffic Calming Petition

Name	Address	Signature
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APPENDIX "C"

Traffic Calming Point Assessment



Appendix C

Traffic Calming Point Assessment System

Town of Midland

Date:

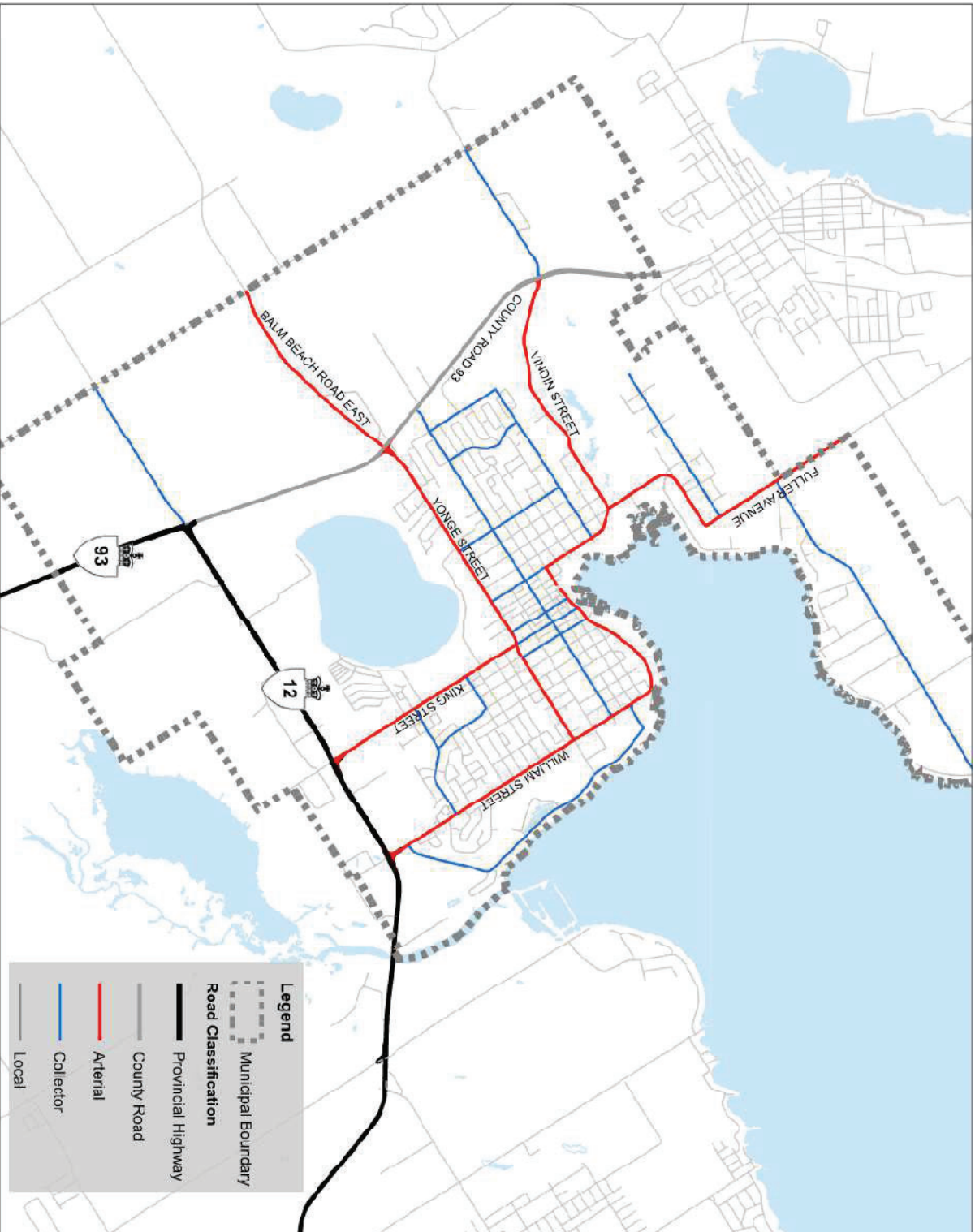
Location:				
Between:		and		
Roadway Type:		<input type="checkbox"/> Local <input type="checkbox"/> Collector		
Feature		Criteria	Max Points	Total
1	Speed	Operating speed	30	0
		High end speed		0
2	Volume	Local Streets	20	0
		Collector Streets		0
<i>NOTE: AADT: Annual Average Daily Traffic</i>				
4	Collisions	Local and Collector	20	0
		Local and Collector		0
<i>NOTE: Vulnerable Road Users are non-motorised road users such as pedestrians and cyclists</i>				
5	Pedestrian/Cyclist Generators	Pedestrian Activity	15	0
		Bicycling/ Walking Trail		0
6	Sidewalks	No sidewalks	15	0
		No sidewalks		0
		Sidewalks		0
				0
<i>Note: Quality of pedestrian service is defined as the condition of the pedestrian routes such as sidewalks and crosswalks. Safety is also a factor when determining the amount of points.</i>				
7	Driveways	Driveway Density	10	0
Total *				
Does the location meet the minimum requirements?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
• Local roadway = minimum 35 points			YES <input type="checkbox"/>	NO <input type="checkbox"/>
• Collector roadway = minimum 52 points			YES <input type="checkbox"/>	NO <input type="checkbox"/>

APPENDIX "D"

Road Classification Map



Appendix D Road Classification Map



APPENDIX “E”

Traffic Calming Guide

Town of Midland
Traffic Calming Guide



This policy will also provide the guideline, procedure and criteria for the initiation, investigation and implementation of traffic calming measures within existing residential neighbourhoods. The policy will ensure safety concerns related to speeding and excessive volume are handled in a fair, transparent and efficient manner. Guidelines included in this policy will be applied to local and collector roadways within residential neighbourhoods.

This policy is not intended to apply to arterial roadways nor does it apply to anticipated future problems. This policy only applies to identify operational issues within existing residential areas. While similar traffic related issues may exist on arterial roadways, the primary function of an arterial road is to move traffic efficiently. Therefore, traffic calming measure(s) that may be appropriate for use on non-arterial roadways would not be suitable for use on arterial roadways.

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INTRODUCTION

1.1 Background

The Town of Midland is responsible for ensuring roadways serve the needs of all users such as cars, transit, pedestrians including those with accessibility needs, cyclists, emergency vehicles and snow removal equipment. When the rules of the road are not followed, residents may no longer feel safe walking or riding their bikes on the street, in these cases traffic calming measures may be needed to restore the street to its intended function in the neighbourhood.

Every year the Town receives numerous complaints or concerns from residents regarding speeding, traffic volumes and/or cut through traffic in residential areas. The Town of Midland responds by investigating the need for neighbourhood traffic calming measures to potentially mitigate these unfavourable driving conditions.

While some residents perceive they already have the solutions to traffic issues in their neighbourhood, studies across North America have shown that using the wrong tool to address a traffic issue not only doesn't solve the problem, but may result in creating additional safety issues in the area. This policy defines what is traffic calming and clarifies what is not traffic calming. The goal of introducing traffic calming is to create safe and attractive streets, promote pedestrian, bicycle, and transit use, and improve the quality of life in residential neighbourhoods.

Traffic calming is a contentious subject and should be dealt with in a clear, concise, and transparent process that will meet the needs and expectations of the community. This document outlines how investigations into traffic calming measures should be initiated and implemented based on the experience gained by the Town of Midland and other Ontario municipalities over the last decade.

1.2 Traffic Calming Purpose and Goals

The overall purpose of this policy is the need to establish a more robust traffic calming policy that is appropriately scaled and tailored for Midland. This policy is intended to restore Town streets, with an identified problem, to their intended function through applicable traffic calming measures, and hence, preserve and enhance the quality of Midland communities.

Traffic calming policies and guidelines are important tools within a municipality's repertoire in terms of implementing safety improvements or addressing safety concerns from residents. As part of the Town of Midland's mandate is to build and maintain a safe and efficient road system for all road users, it is necessary that Midland has updated policies that reflect best-practices for effective safety measures.

The specific goals of this traffic calming policy are to

- Educate residents about traffic calming so they can make more informed decisions and also understand the rationale being Midland's decision making process.

- Provide a policy that Midland officials and the general public are confident is an effective and fair tool in evaluating speeding and/or traffic volume problems.
- Provide a standard format for dealing in a consistent manner with complaints regarding speeding and traffic safety concerns.
- Reduce the workload and duplication of effort for Midland staff in responding to resident traffic concerns.
- Educate people on how to create a safe and pleasant roadway environment for residents, motorists, cyclists and pedestrians.
- Encourage public involvement in the traffic calming activities.
- Educate residents on pedestrian and cyclist safety.

This policy will also provide the guideline, procedure and criteria for the initiation, investigation and implementation of traffic calming measures within existing residential neighbourhoods. The policy will ensure safety concerns related to speeding and excessive volume are handled in a fair, transparent, and efficient manner. Guidelines included in this policy will be applied to local and collector roadways within residential neighbourhoods.

The policy does not apply to arterial roadways nor does it apply to anticipated future problems. This policy only applies to identify operational issues within existing residential areas. While similar traffic related issues may exist on arterial roadways, the primary function of an arterial road is to move traffic efficiently. Therefore, traffic calming measure(s) that may be appropriate for use on non-arterial roadways would not be suitable for use on arterial roadways.

1.3 What is Traffic Calming?

Traffic calming is a term commonly associated with physical features such as speed humps, pinch points, and chicanes. They are installed on a road to reduce the speeds at which vehicles travel, to discourage through traffic, to improve traffic safety, and to improve comfort levels for all road users.

Traffic calming is intended to improve the quality of life for residents on traffic calmed streets, achieve slower speeds for motor vehicles, and increase the safety for non-motorized users of the street. Traffic calming solutions should be looked at as a community wide strategy (as opposed to on a street by street basis) to ensure that volume and speed concerns are not transferred to adjacent streets.

1.2 What is NOT Traffic Calming?

Over the past 30 years there has been a significant amount of knowledge gained through the implementation of successful projects to determine what traffic calming measures work and which traffic calming measures are not effective. The all way stop, 40 km/hr reduced speed zone, children at play signs, posted speed signs, rumble strips and speed bumps are all devices commonly mistaken for being traffic calming tools. In some cases, these devices do not work to calm traffic for the reasons listed below:

Unwarranted All Way Stop

- Creates higher traffic speeds between stop signs. Studies have determined the speed is only reduced for 100 m on either side of the intersection.
- Results in poor compliance with stop signs due to driver frustration.
- Results in more frequent rear-end collisions caused by low percentage of motorists who actually do come to a complete stop.
- Requires frequent police enforcement as motorists do not stop, a drain on manpower resource.
- Potential risk to pedestrians **especially children and seniors** crossing an intersection, since not all motorists approaching an intersection will stop.
- Motorists get in the habit of stopping at unwarranted all-way stop locations, then assume at a 2 way stop cross traffic is going to stop and pull out in front of an opposing vehicle which results in a collision.

In light of the above, all-way stops should be used sparingly as a tool to calm traffic. There are established criteria for all-way stop control based upon the numbers of pedestrians and vehicles sharing an intersection, the collision history and visibility. When these criteria are followed, risks are minimized and new safety concerns are not created. There have been numerous studies completed in North America which have validated all of the above findings.

40 km/hr Speed Zone

- People travel at a speed they feel comfortable based on the environment through which they are driving, regardless of the posted speed limit.
- Compliance with an artificially reduced speed is only achieved with consistent and visible police enforcement, a resource which is not always available.
- Collisions, when they occur, can be more significant due to the differences in speed between vehicles.
- Pedestrians may perceive the roadway to be safer due to the reduced speed limit.
- This false sense of security may lead pedestrians that are crossing the roadway to not be as cautious as they would be otherwise.

'Children at Play' Sign

- Many signs in residential areas, which are installed to 'warn' people of normal conditions, fail to improve safety.

- Warning signs can be effective tools if used sparingly and only to warn motorists of uncommon hazards that are not apparent to motorists.
- 'Children at Play' signs can give parents a false sense of security since motorists often disregard these signs.
- Children playing in the streets, while common place, is dangerous and prohibited in the Highway Traffic Act.
- Since children live on nearly every residential block, 'Children at Play' signs would need to be placed on every roadway.
- Residential blocks with no signs might imply that no children live there, so it is acceptable to exceed the posted speed limit.

Speed Limit Sign

- The posted speed limits for roadways are typically established based upon recognized engineering criteria related to the roadway design.
- Posted speed limits, which do not match the characteristics of the roadway frustrate motorists and tend to foster aggressive driving habits. There are several examples where speed concerns exist primarily as a result of assigned speed limits that neither reflects the design speed nor the operating conditions of the roadway. Large discrepancies between posted speed limits and operating speeds can create a false sense of security for all road users, including pedestrians and places an additional enforcement burden on the Police.
- Reducing posted speed limits, without changing the characteristics of the roadway to encourage reduced speeds has been shown to have a minimal impact on vehicle operating speeds.
- Posted speed limits should be implemented in a consistent manner so that the speed limits maintain a level of credibility and compliance when the posted speed limit is applied properly. Reduced speed limits seem to provide the greatest result in situations when they are self-enforcing
- Additional signage and/or adjusting the posted speed limit of a roadway are not considered to be traffic calming measures.

Rumble Strip

A Rumble Strip is a raised pavement section that can be closely spaced along a roadway at regular intervals. Rumble strips are a road safety feature used to caution inattentive motorists of potential danger. As the motorist travels over the rumble strips, the vehicle experiences both noise and vibration to alert the motorist.

They are typically installed along freeways and higher speed roadways to alert

motorists that may begin to veer from the travel lane to the shoulder. Their purpose is to reduce the number of vehicles that depart the roadway; this is a common example of rumble strips used to enhance safety. Rumble strips can also be installed across the travel lane itself when unusual conditions exist ahead.

Rumble Strips can be installed along the travel lanes of a higher speed roadway that contains an isolated all-way stop controlled intersection. A motorist may grow accustomed to traveling at a certain speed and otherwise may not expect to stop; the purpose of the rumble strip is to alert the driver. This is a common example of rumble strips to alert motorists of a condition that is unusual to a specific roadway.

Rumble strips should not be used as traffic calming measures. These measures become less effective over time as the motorists grow accustomed to them. Rumble strips also increase noise levels for nearby residents and commonly require additional maintenance.

Speed Bumps

These measures should not be confused with speed humps. Speed bumps are vertical obstructions often found in parking lots (shopping centers, schools, condominium complexes, parks, etc.). Speed bumps typically measure between 75 mm and 100 mm in height and 3 m in length and are often designed for a design speed that is much lower than a typical posted speed limit along a public roadway.

Traffic calming measures should be designed and implemented with the purpose that vehicles will be able to comfortably travel at the posted speed limit. In contrast, speed bumps require vehicles to travel much slower to attain a comfortable travel speed. The necessary braking and slow speeds can create a safety hazard, possibly causing rear-end collisions.

1.3 Advantages and Disadvantages of Traffic Calming

Traffic calming, if used properly, will address identified operational traffic issues; however, it will also introduce some disadvantages to a residential neighbourhood that will impact area residents after the project is complete. Listed below are some of the advantages and disadvantages created or caused by traffic calming measures:

Advantages:

- Reduced vehicle speeds
- Reduced traffic volumes
- Reduced number of cut through vehicles
- Improve neighbourhood safety especially for pedestrians
- Reduced conflicts between roadway users
- Increase compliance with regulatory signs

Disadvantages:

- Potential increase in emergency vehicle response time
- Could make it more difficult to get into and out of your neighbourhood every day
- May result in expensive solutions (time and resources)
- May shift or divert traffic onto neighbouring roadways
- Increase maintenance time and costs
- Add visually unattractive warning signs to a residential area
- May splinter neighbourhood with strong 'for and against' traffic calming opinions

1.4 Pedestrians & Traffic Calming

The principal purpose to reducing the speed of traffic in residential areas is to protect all vulnerable road users, such as pedestrians. Copied below is an excerpt from the Ontario Traffic Manual Book 15 - Pedestrian Crossing Facilities:

Pedestrians' Rights and Responsibilities

Notwithstanding the distinction between controlled and uncontrolled crossings, the rights and responsibilities for pedestrians are recognized in the Highway Traffic Act:

1. In the absence of statutory provisions or bylaw, a pedestrian is not confined to a street crossing or intersection and is entitled to cross at any point, although greater care may then be required of him or her in crossing. However, pedestrians crossing the highway must look to ensure the crossing can be made safely or possibly be held responsible for any ensuing collision.
2. Pedestrians must exercise due care even when they are lawfully within a crossing and have right-of-way. It is not an absolute right, and they must still exercise care to avoid a collision with a vehicle.
3. If there is a crosswalk at a signalized intersection, pedestrians have to walk within the crosswalk

The above excerpt is stating whenever a pedestrian crosses a road, they have a duty of care to themselves to cross when it is safe. It is important to remember under the Highway Traffic Act motor vehicles are only required to stop or yield to pedestrians at a controlled crossing such as traffic signals or pedestrian signals. At all uncontrolled crossings pedestrians must wait for a safe gap in traffic sufficient for them to cross

before entering the road.

When an area is studied for traffic calming pedestrian crossing points are primary focus points, since this potential conflict point is exactly where you want drivers to slow down. The installation of traffic calming tools such as raised crosswalks, raised intersections, curb extensions does not change the rules of the Highway Traffic Act, pedestrians must still cross the road responsibly.

2. SOLUTION IDENTIFICATION

When determining which traffic calming measure is to be implemented to address the confirmed issue, consideration should be given to whether a physical measure or a social / cultural traffic calming measure is preferred.

2.1 Passive Traffic Calming

Passive traffic calming treatments are simple modifications in comparison to physical treatments. Passive modifications are intended to visually reduce effective lane width for a motorist and in most circumstances re-allocate some of road space to cyclists and on-street parking. These treatments have proven to be capable of reducing 85th percentile operating speeds by up to 5 km/hr in other municipalities.

Passive treatments are implemented on a proactive and reactive basis and are typically applied uniformly over the entire road section, unlike physical treatments which are best described as spot treatments. The modifications associated with passive calming treatments are typically well received by the public. Staff provides the public with advance notification, including a plan of the proposed modifications prior to implementation. This level of public interaction appears to work well for the application of passive traffic calming.

2.2 Physical Traffic Calming

Physical traffic calming can be broken down into three categories vertical deflections, horizontal deflections, and physical obstructions.

Vertical traffic calming measures provide an obstruction that vehicles are able to travel over. The change in pavement height (and sometimes pavement materials) can cause discomfort to the occupants of vehicles that are exceeding the design speed of the traffic calming measure.

Horizontal traffic calming tries to prevent vehicles from traveling in a straight line at excessive speeds by using measures such as raised islands and curb extensions.

Physical obstructions involve a full or partial closure of the road.

Examples of passive and physical traffic calming techniques are listed in Table 1. Appendix "A" provides a more detailed explanation of the traffic calming devices listed below, including the advantages and disadvantages.

Table 1- Applicability of Traffic Calming Measures in Midland

Traffic Calming Technique	Measure Applicable On: Road Classification		
	Local Road	Collector Road	Arterial Road
Passive and Mitigating Measures			
Education	YES	YES	YES
Community Entrance Sign	YES	YES	YES
Textured Crosswalk	YES	YES	YES
Targeted Enforcement	YES	YES	YES
Speed Display (PEEP)	YES	YES	YES
On Street Parking	YES	YES	YES
Road Diet	YES	YES	YES
Physical Vertical Deflection			
Speed Cushion	YES	YES	NO
Raised Intersection	YES	YES	NO
Raised Crosswalk	YES	YES	NO
Speed Table	YES	YES	NO
Speed Hump	YES	NO	NO
Physical Horizontal Deflection			
Curb Extension	YES	YES	YES
Curb Radius Reduction	YES	YES	NO
Neighbourhood Traffic Circle	YES	YES	NO
Centre Island Median	YES	YES	YES
One-Lane Chicane	YES	YES	NO
Lateral Shift	YES	YES	YES
Roundabout	YES	YES	YES
Physical Obstruction			
Directional Closure	YES	YES	NO
Raised Median Through Intersection	YES	YES	YES
Right-In/Right-Out Island	YES	YES	YES
Intersection Channelization	YES	YES	YES
Diverter	YES	YES	NO
Full Closure	YES	YES	NO

2.3 Streets That Qualify for Traffic Calming

Local and Collectors Roadways

Traffic calming will only be considered on local and collector roadways and not on arterial roadways in the Town. Through application of this policy and by applying good engineering judgment, traffic calming measures, when deemed prudent, will be installed in a manner that will ensure they provide the most effective solutions while continuing to support the intended function of the roadway. For example, to ensure that bus movement remains efficient on collector routes, curb radius reduction would not be recommended at locations where buses must turn right since curb radius reductions significantly slow the turning speed of larger transit vehicles.

Local Roads

The primary function of local roadways is to provide access to adjacent properties. Local streets are not intended for use as through routes or as important links to move traffic within an area's overall road network. An acceptable volume of traffic for a local road is up to 1,500 vehicles a day. Examples of local streets are Dina Crescent, Keller Drive, and Riverwalk Place.

Collectors Roads

Collectors Roads carry traffic volume typically under 5,000 vehicles per day, between local roads, primary collectors, and arterial roadways. Secondary collectors help circulate traffic within individual neighbourhoods. Collectors roads link smaller local roadways to the larger road network and they can be relatively short as compared to arterial roadways which may extend from one side of the Town to the other. Examples of secondary collectors are Birchwood Dr., Hugel Ave. and Galloway Blvd.

3. POLICY GUIDELINES

The following guidelines will be considered when investigating, selecting, and implementing traffic calming measures. These guidelines will ensure that the appropriate measures are considered, and the potential negative impacts are minimized. Following these guidelines will maximize the effectiveness of traffic calming while building community acceptance and support for the final recommendations.

Traffic calming measures will:

- Be considered only after education, enforcement and traffic engineering efforts have failed to produce the desired results.
- Be considered when there is a demonstrated safety, speed or short-cutting traffic concern and acceptable alternative measures have been exhausted.
- Be considered after focus is placed first on improvements to the arterial road network, such as signal timing optimization.
- Include consideration as to whether an area-wide plan versus a street-specific plan is more suitable: an area wide plan should be considered if a street-specific plan

would likely result in displacement of traffic onto adjacent streets.

- Be predominantly restricted to two lane roadways (one lane of through traffic in each direction) and a posted speed limit no greater than 50 km/h.
- Not impede non-motorized, alternative modes of transportation and be designed to ensure pedestrian and cycling traffic is unaffected.
- Not impede Emergency Services access unless alternate measures are agreed upon.
- Maintain reasonable automobile access to Town roads
- Only be installed after Engineering staff has investigated existing traffic conditions and the necessary approvals have been received.
- Be monitored; follow-up studies will be completed to assess effectiveness and the results will be communicated to the community and Council.

4. TRAFFIC CALMING PROCESS

The following process will be used when proceeding with a request for traffic calming. An established and formal process for investigating roads provides consistency and equality in the determination of whether traffic calming is warranted in a given location. The process is illustrated in the flow chart shown in Figure 1.

4.1 Public Input

In order for traffic calming to achieve the goal of restoring residential streets to their intended purpose, community involvement and support is paramount. Throughout the process, residents are encouraged to participate in the development of a traffic calming plan suitable to the neighbourhood and the concerns within it.

Before an area is considered for traffic calming a signed petition (Appendix B) must be received by The Town of Midland Engineering Department showing a minimum of 51% support for traffic calming measures. If the petition does not show the required level of interest, the area will not qualify for traffic calming.

Later in the process, after passive measures have failed to address the traffic concerns, area residents will be asked by survey or at a Public Information Centre (PIC) for input on minor adjustments into a proposed physical traffic calming plan for the area.

In order for a traffic calming plan to be approved it must be circulated amongst all impacted area residents and must receive a majority response rate in favour from all residents surveyed before being considered for implementation.

The benefit of community involvement is that it generates support for a traffic calming program and assists in the implementation of a plan without significant opposition upon completion. Community involvement also enhances the credibility of the traffic calming program, particularly when it is eventually presented to Council for approval.

4.2 Process Initiation and Pre-Screening

Residents with traffic related concerns are instructed to submit a request to investigate traffic calming within their neighbourhood to the Town. Staff will then conduct a brief preliminary assessment to determine if the requested roadway meets the Initial Screening Criteria, shown in Table 2.

TABLE 2: TRAFFIC CALMING PRE-SCREENING PROCESS

Completed During Initial Contact

1. Is road a local or secondary collector	PASS	FAIL
2. Is AADT > 500	PASS	FAIL
3. Is posted speed 50 km/hr	PASS	FAIL
4. Is the road assumed	PASS	FAIL
5. Is the road primarily residential	PASS	FAIL
6. Does the street provide an obvious by-pass to a major intersection	PASS	FAIL
7. Is section of road longer than 150m	PASS	FAIL
8. Have any previous efforts been made within the last 12 months	PASS	FAIL

If the road in question fails any of the 8 areas listed in the pre-screening it does not qualify for traffic calming.

4.2.1 Traffic Calming Ineligibility based on Pre-screening

For locations not meeting the above-noted initial screening criteria, staff will consider front-line mitigating measures to address the neighbourhood traffic concerns. These methods could include tools such as the use of targeted police enforcement, sign installation and pavement marking modifications.

Front-line mitigating measures very rarely require public involvement such as surveys and public meetings. However, they may require monitoring and evaluation to assess their effectiveness. Details regarding front-line mitigating measures are provided in

Appendix 'A'.

4.2.2 Traffic Calming Neighbourhood Petition

After it has been determined that the requested location meets the initial screening criteria, a petition will be distributed to the residents within the impact area. The Town is responsible for the initiation, distribution and collection of the Traffic Calming petition to ensure consistency of the process by managing the collection of public input and this will be done in a manner that incorporates community involvement. An example of a petition letter is shown in Appendix B. The focus of the petition will centre on whether or not there is neighbourhood support for the Town to initiate an investigation into the need for traffic calming on the requested roadway.

A minimum of fifty one percent (51%) of property owners in the impact area must indicate their approval by signing the Traffic Calming Petition. The signatures must come from households with direct frontage or flankage onto the section of roadway that has been identified as the location for the potential implementation of traffic calming measures, as defined by Town Engineering staff. Each household is represented by one signature, regardless of the number of people in the household. This step in the process is crucial in determining the level of concern from the residents. Failure to meet the 25% support level will result in termination of the investigation; meeting the required 25% support level will trigger the commencement of a traffic calming study.

The Town shall allow twenty-eight (28) days for the petition to be returned. Day zero (0) is the date on which the Town delivers the Traffic Calming Petition to the citizen representative:

- a. If petition approval is achieved, the evaluation phase begins.
- b. If twenty-eight (28) days elapse and petition approval has not been achieved, the roadway will not be considered for traffic calming for twelve (12) months. This twelve (12) month waiting period may be waived at the discretion of Engineering Department Staff.

4.3 Data Collection

Once a successful petition is received the collection of data is scheduled based on a priority list. The Town of Midland Engineering Department shall collect information and data along roadway(s) in the project area as deemed necessary by Engineering Department staff to qualify and quantify the extent of the local traffic problem. The data collection may include any of the following:

- Vehicle volume count to determine 24-hour traffic
- Speed study to determine existing speed data
- Classification count to determine heavy vehicle traffic
- Collision data for the most recent three (3) years

- Study to quantify cut-through traffic, if necessary
- Existing roadway conditions (e.g. pavement condition, signing, marking)
- Pedestrian activity
- Presence of sidewalks on one or both sides of the road
- Presence of special pedestrian generators such as schools, seniors homes, playgrounds, etc. in the area
- History of traffic operations for the area within last 5 years

A review of the data will be completed using recognized engineering standards. Once collected and summarized, the data will be utilized in the point assessment system to determine a total point value. This assessment will be used to determine the need for traffic calming and assist in setting priority for locations of consideration.

4.3.1 Point Assessment System

The point assessment system is a screening process focused on the various attributes of a roadway in order to quantify its potential need for traffic calming. By means of assigning weighted points based on the severity of certain road attributes (e.g. 85th percentile speed), this process will bring to the forefront roadways requiring consideration while quantifying the current conditions. A point assessment system is provided in Appendix 'C'.

The point assessment system will also be used to prioritize locations for consideration. Those locations with an extremely high point assessment will be given priority based on the quantitative nature of the point assessment system. Depending on funding availability, locations will be selected based on the point system with those locations with the highest points constructed first. If funding does not permit all locations to be constructed in one year, roadways will be carried forward to the next year when they will then be re-prioritized to include any new locations.

The minimum number of points required to proceed with the investigation of traffic calming measures differs based on the classification of roadway. In keeping with the objective of restoring roadways to their intended function, local and collector roadways are designed and expected to convey varying levels of traffic volume. This, in turn, has a bearing on the minimum point value required to proceed, as traffic volume is a major consideration. Based on this, the following are minimum point values for each road type:

- Local road minimum 35 points
- Collector road minimum 52 points

Should a location fail to meet these requirements, residents will be notified in writing and the investigation for traffic calming measures will discontinue. However, staff will continue to address the concerns of the residents by means of the front-line mitigating measures.

4.3.2 Traffic Calming Design Considerations

The data collected combined with site visits, historical information, future maintenance and construction plans, as well as resident feedback will be taken into consideration to determine potential traffic calming measures.

Appropriate traffic calming measures will be determined based on the list of traffic calming measures outlined in Appendix 'A' of this policy. The traffic calming design could include one or more different types of traffic calming techniques. The proposed traffic calming measures will be in accordance with the design Guidelines found in The Canadian Guide to Neighbourhood Traffic Calming, engineering judgement and experience of staff.

The preferred design will first be presented to Emergency Services and/or Operations. After any required modifications to the preferred design as a result of public input, a traffic calming survey will be delivered to affected residents.

4.4 Comments from Emergency/Transit and Roadside Operations

Staff will provide the preferred design to the relevant review agencies (e.g. Emergency and Operations). Comments from the potentially affected services will be solicited and feedback with respect to possible impacts will be encouraged. As required, Town staff will work with agencies to modify the design, as necessary. While it is preferable to modify the traffic calming design, if modifications are not able to remedy agency concerns, the traffic calming process will be discontinued for the roadway under consideration and residents will be notified.

4.5 Public Information Centre & Public Input Notice

Staff will host a Public Information Centre (PIC) to present the purpose, objectives and implementation process of traffic calming in general. The PIC notice will be circulated to all residents who live within 60m of the centerline of each side of the street being studied. Staff will then present and explain the rationale behind the specific preferred traffic calming design. The public meeting will provide residents with an opportunity to become involved in the process, learn more about the proposed traffic calming treatment(s) and to provide their feedback. Each plan will include a procedure to communicate with and engage the neighbourhood, in keeping with the Council Policy on Community Engagement and its principles.

Notification of the meeting will be published in local newspapers and through other social media network, including Town website, Facebook and Twitter. The purpose of this notice will be to provide notification to the public regarding the meeting date, time, and location. It will also present an opportunity to solicit comments on the alternative traffic calming measures.

4.6 Community Support Survey

Based on input received from Emergency, Transit and Operations, as well as from the public at the public meeting, the preferred design will be modified. The objective of the community support survey is to determine the level of support for the traffic

calming design and to provide an opportunity for the most directly affected residents to oppose any modifications to the road. It is also intended to measure the support of the preferred design proposed to the residents.

4.6.1 Survey Scope

Surveys will be delivered by mail to residents who live on the street being studied and at a minimum, will contain:

- A brief description of traffic calming, including its advantages and disadvantages;
- The results of the traffic studies undertaken by staff;
- A survey question asking if residents are in favour, opposed or neutral to the implementation of traffic calming measures in the identified location(s);
- The preferred traffic calming design;
- A request for comments and feedback; and
- An indication that this is the final opportunity to modify and improve the preferred design to address any outstanding concerns and to incorporate resident input.

4.6.2 Measuring Community Support

In order for the process to continue, a majority of total surveys delivered must be returned to the Town indicating they approve the future installation of the recommended traffic calming plan. This reinforces that community support is vital for the ultimate success of traffic calming.

If this support rate is not met, the process will cease and a notification of failure to meet the community support levels will be sent to the residents on the mailing list.

4.7 Resident Notification

Residents will be notified that traffic calming has been either approved or not approved by the Town on the subject roadway. The notice will be sent to the same mailing list used to deliver the traffic calming survey and any other persons having requested notification throughout the process.

4.8 Finalize Preferred Traffic Calming Plan

Using technical data, community feedback, and in keeping with the goals, objectives and principles set out in this policy, staff will finalize the preferred traffic calming design to be put forward as the recommended preferred traffic calming plan. In finalizing the preferred traffic calming plan, general consideration will be given to the various aspects of road design such as utility placement, landscaping, sign requirement and drainage.

If, during the detailed design stage, limitations are identified which challenge the feasibility of the plan, alternatives will need to be considered. This may include alterations or a re-development of the preferred plan. If significant or major changes to the plan are required due to design constraints, agencies and residents on the mailing list will be consulted and notified of any changes. If staff believe that the required modifications to create the detailed design result in a significantly different final design from that which was presented to residents as part of the survey, staff may recommend additional agency consultation,

another survey and/or public meeting.

4.9 Implementation of Traffic Calming Measures

Upon approval of Council, resident notification, and sufficient funding, traffic calming measures will be implemented. Residents will be notified of implementation timelines through the contact mailing list. Where feasible, staff may decide it is beneficial to phase in the traffic calming plan through the use of temporary or removable traffic calming measures such as pavement markings or barrels. This will allow time to examine the impact of the measures and their effectiveness before committing funding to permanent treatments.

4.10 Evaluation and Monitoring

The Engineering Department will monitor the roadway to determine the effectiveness of the utilized measures and their impact on the surrounding road network. This information will be used in recommending similar measures in the future. In addition to conducting before and after speed studies the Town will conduct studies to assess if the traffic calming plan has resulted in significant amounts of traffic diverting to adjacent, parallel streets in some cases. These after studies will be compared with the Town's 'before' studies to determine the change in traffic volume.

4.11 Removal of Traffic Calming Measures

Traffic calming devices may be removed, at the request of residents after 2 years provided that at least the same level of support exists to remove as was measured for installation.

A minimum of fifty one (51) percent of property owners within the impact area must indicate their approval by signing a Traffic Calming Removal Request. The signatures must come from households with direct frontage or flankage onto the section of roadway that has been identified as the location for the potential implementation of traffic calming measures, as defined by Engineering Department Staff. Each household is represented by one signature, regardless of the number of people in the household.

When the Town Engineering Department receives a successful petition, a survey will be sent out to all the area residents who were initially surveyed. The survey will be delivered to the same residents as was initially done to gauge support for traffic calming. The survey must indicate majority of respondents surveyed agreeing to the removal to be deemed successful. Traffic calming measures must be installed for at least 2 years before starting the process to remove them. If traffic calming devices are removed, the subject street must wait at least 5 years before requesting a new traffic calming plan; at this point the approval process will start over.

If a request to remove a single traffic calming device, within an overall traffic calming plan, is received, all traffic calming devices will be considered for removal. Depending on circumstances, it could be possible to remove a single device constructed as part of an overall plan, however, in most cases all devices work together to be effective and to ensure that traffic is not diverted where it should not be. The Town reserves the right to remove traffic calming measures if it determines that they are ineffective or unsafe, or if they have created a negative impact that cannot be corrected. The Town will mail out a notification and advertise in local newspapers informing of its decision to remove traffic calming measures.